

CLAIMS:

What is claimed is:

1. A head stack assembly for a data recording disk drive, comprising:

a carriage on which a coil is mounted, having a first surface and a second surface;

a first head gimbal assembly mounted on said first surface;

a second head gimbal assembly mounted on said second surface; and

wherein a datum member for positioning said first head gimbal assembly on said first surface and for positioning said second head gimbal assembly on said second surface is formed on each of said first surface and said second surface of said carriage.

2. A head stack assembly according to claim 1 wherein said datum member is two datum pins spaced from each other, and each of said first head gimbal assembly and said second head gimbal assembly has two apertures into which said two datum pins are inserted, respectively.

3. A head stack assembly according to claim 2 wherein said carriage has an aperture into which a pivot member is inserted, and said aperture is located between said two datum pins.

5. A head stack assembly according to claim 4 wherein
the total weight of said head stack assembly is balanced
at a center of said pivot member.

1

1 1. A head stack assembly for a data recording disk
2 drive, comprising:

3 a carriage on which a coil is mounted, having a
4 first surface and a second surface;

5 a first head gimbal assembly mounted on said first
6 surface;

7 a second head gimbal assembly mounted on said second
8 surface; and

9 wherein said carriage has a first aperture into
10 which a pivot member is inserted, and a diameter of said
11 first aperture is larger than a diameter of said pivot
12 member, each of said first head gimbal assembly and said
13 second head gimbal assembly has a second aperture, the
14 center of which is aligned to the center of said first
15 aperture, the diameter of said second aperture is larger
16 than said diameter of said pivot member, said second
17 aperture has a V-shaped edge for aligning said pivot
18 member, and a portion of said carriage is extruded into
19 said first aperture, and said portion extruded from said
20 carriage pushes said pivot member to said V-shaped edge
21 of said second aperture when said pivot member is
22 inserted into said second aperture and said first
23 aperture.

2

1 2. A head stack assembly according to claim 1 wherein
2 said V-shaped edge is formed to align the center of said
3 pivot member to a center line extending in a longitudinal
4 direction of said head stack assembly.

3

2

1 8. A head stack assembly according to claim 7, wherein
2 the total weight of said head stack assembly is balanced
3 at a center of said pivot member.

4

3

1 9. A head stack assembly according to claim 8, wherein
2 material of said carriage is plastic resin, and material
3 of said first and second head gimbal assemblies is metal.

5

1 10. A head stack assembly for a data recording disk
2 drive, comprising:

3 a carriage on which a coil is mounted, including a
4 first surface and a second surface and having a first
5 aperture into which a pivot member is inserted, wherein a
6 diameter of said first aperture is larger than a diameter
7 of said pivot member;

8 a first head gimbal assembly mounted on said first
9 surface;

10 a second head gimbal assembly mounted on said second
11 surface;

12 wherein two datum pins for positioning said first
13 head gimbal assembly on said first surface and for
14 positioning said second head gimbal assembly on said
15 second surface are formed on each of said first surface
16 and said second surface of said carriage;

17 wherein each of said first head gimbal assembly and
18 said second head gimbal assembly includes a suspension
19 load beam and an arm member, said suspension load beam
20 has a rear portion, a bending portion and a front portion
21 supporting a read/write head, and said arm member is
22 stacked to said rear portion; and

23 wherein said suspension load beam has two apertures
24 into which said two datum pins are inserted,
25 respectively, and said suspension load beam has a second
26 aperture, the center of which is aligned to the center of
27 said first aperture, the diameter of said second aperture
28 is larger than said diameter of said pivot member, said

29 second aperture has a V-shaped edge for aligning said
30 pivot member, and a portion of said carriage is extruded
31 into said first aperture, and said portion extruded from
32 said carriage pushes said pivot member to said V-shaped
33 edge of said second aperture when said pivot member is
34 inserted into said second aperture and said first
35 aperture.

6 5
1 ~~11~~. A head stack assembly according to claim ~~10~~ wherein
2 said first aperture is located between said two datum
3 pins.

7 5
1 ~~12~~. A head stack assembly according to claim ~~10~~ wherein
2 a line passing through said two datum pins is inclined
3 from a center line extending in a longitudinal direction
4 of said head stack assembly.

8 7
1 ~~13~~. A head stack assembly according to claim ~~12~~ wherein
2 the total weight of said head stack assembly is balanced
3 at a center of said pivot member.

9 5
1 ~~14~~. A head stack assembly according to claim ~~10~~ wherein
2 said V-shaped edge is formed to align the center of said
3 pivot member to a center line extending in a longitudinal
4 direction of said head stack assembly.

10 9
1 ~~15~~. A head stack assembly according to claim ~~14~~ wherein
2 material of said carriage is plastic resin, and material
3 of said first and second head gimbal assemblies is metal.

1 16.. A head stack assembly for a data recording disk
2 drive, comprising:

3 a carriage on which a coil is mounted, having a
4 surface and a side wall vertical to said surface wherein
5 a positioning pin is formed on said side wall and a
6 positioning grooves extending from said side wall to an
7 inside of said carriage is formed;

8 a head gimbal assembly mounted on said surface and
9 supporting a read/write head;

10 a flexible cable having a first portion, on which
11 connecting pads connected to said read/write head are
12 formed, a second portion, on which connecting pads
13 connected to said coil are formed and a third portion
14 from which said first portion and said second portion are
15 branched; and

16 wherein said first portion has an aperture and said
17 second portion has a latch structure, said positioning
18 pin is inserted into said aperture of said first portion
19 and said latch structure of said second portion is
20 inserted along said positioning grooves to position said
21 first portion along said side wall of said carriage.

1 17. A head stack assembly according to claim 16 wherein
2 said carriage is provided with a guide member which
3 includes a top portion parallel to said surface of said
4 carriage and having one end coupled to said carriage and
5 the other end, a side portion parallel to said side wall
6 and having one end coupled to said the other end of said
7 top portion and the other end, and a support portion
8 coupled between said the other end of said side portion
9 and said carriage.

10 18. A head stack assembly according to claim 17 wherein
11 said first portion and said second portion of said
12 flexible cable are positioned between said wall and said
13 side portion.

14 19. A head stack assembly according to claim 18 wherein
15 a wire positioning pin is formed on said side portion.

16 20. A data recording apparatus, comprising:
17 a frame;

18 a data recording disk mounted on said frame;

19 a head stack assembly pivoted on said frame, and
20 having a front portion supporting a read/write head and a
21 rear portion including a coil supporting frame;

22 wherein a first resilient member is extended along a
23 first side surface of said coil supporting frame from
24 said head stack assembly, and a second resilient member
25 is extended along a second side surface of said coil
26 supporting frame from said head stack assembly, and

27 wherein an inner crash stop member for engaging with
28 said first resilient member and an outer crash stop
29 member for engaging with said second crash stop member
30 are formed on said frame.

1 21. A data recording apparatus according to claim 20
2 wherein material of said first and second resilient
3 members is plastic resin.

1 22. A data recording apparatus, comprising:
2 a frame;

3 a data recording disk mounted on said frame;

4 a head stack assembly pivoted on said frame by a
5 pivot member, and having a front portion supporting a
6 read/write head and a rear portion supporting a voice
7 coil;

8 a magnet mounted on said frame to apply a magnetic
9 field to said voice coil; and

10 wherein a said pivot member includes a washer made
11 of a magnetic material and a fixing means for fixing said
12 washer and said head stack assembly on said pivot member,
13 said washer has a tab portion extended from the
14 peripheral of said washer and said washer is fixed to
15 said head stack assembly by said fixing means to position
16 said tab portion to the nearest position to said magnet
17 when said head stack assembly is stopped its outer most
18 stop position.

1 23. A data recording apparatus according to claim 22
2 wherein when said head stack assembly is stopped at said
3 outer most position, said magnet and said tab portion
4 generate a bias force for staying said head stack
5 assembly at said outer most stop position.

1 24. A data recording apparatus, comprising:
2 an electrically conductive frame;

3 a data recording disk mounted on said frame;
4 an electrically conductive head stack assembly pivoted on
5 said frame by an electrically conductive pivot member and
6 having a front portion supporting a read/write head and a
7 rear portion supporting a voice coil, wherein said head
8 stack assembly is electrically connected to said frame
9 and said pivot member, and a plurality of first
10 connecting pads connected to said read/write head are
11 formed on an insulating layer formed on said head stack
12 assembly;

13 a control circuit mounted on said frame;

14 a flexible cable for connecting said first
15 connecting pads to said control circuit; and

16 wherein a second connecting pad electrically
17 connected to said head stack assembly is formed on said
18 insulating layer, and said second connecting pad is
19 electrically connected to a reference potential of said
20 control circuit through said flexible cable.

1 25. A data recording apparatus according to claim 24
2 wherein said head stack assembly includes a wiring plate
3 which includes an electrically conductive supporting
4 plate, an insulating layer, and said first and second
5 connecting pads and electrically conductive wires formed
6 on said insulating layer; said electrically conductive
7 wires connect said first connecting pads to said
8 read/write head and connect said second pad to said
9 electrically conductive supporting plate.

1 26. A head stack assembly for a data recording disk
2 drive, comprising:

3 a carriage mounted with a coil;

4 a head gimbal assembly mounted on a surface of said
5 carriages; and

6 wherein a datum member for positioning said head
7 gimbal assembly on said surface is formed on said
8 surface.

wherein a datum member for positioning said first head gimbal assembly on said first surface and for positioning said second head gimbal assembly on said second surface is formed on each of said first surface and said second surface of each of said plural carriages.

[illegible]